Determination: NFA

PA/VSI Or RFA FILE REVIEW CHECKLIST

Facility Name: Azko Chemicals_____

EPA ID: ILD 000 805 705_____ City: McCook_____ State: IL__

Name of Reviewer: Maureen McHugh_____ Date of Review: 8/1/08_____

1	Yes	No	Is this a one folder site?
2	Yes	No	Are there Superfund files for this site?
3	Yes	No	Did you Read the Executive Summary?
			There are: __6__ SWMUs and ___0__ AOCs at this site.
4	Yes	No	Did you review the regulatory history?
5	Yes	No	Does the facility have interim status or a permit?
			This facility is a: __X__ SQG, _____ LQG, or ____ Less than 90 day.
6	Yes	No	Was the Facility closed per RCRA? RCRAInfo 380 (1987, 1995)
			If Yes, was the closure: __X__ CC, or _____ CIP.
7	Yes	No	Are there documented (historical) releases? Briefly describe on Page 2.
8	Yes	No	Were there releases identified during the inspection? Briefly describe on Page 2.
9	Yes	No	Do you agree with the Conclusions and Recommendations?
			If No, briefly describe on Page 2.

As a result of your review of the PA/VSI or RFA file, please classify this site as:

___X__No further corrective action recommended or warranted: These are sites that closed the regulated units and any other SWMUs or AOCs at the site did not warrant any further corrective action (no historic releases or evidence of releases observed during the Visual Site Inspection).

_____ Further Action Required: Soil or sediment sampling or groundwater sampling or monitoring or any type of investigation that was recommended in the report in response to a documented or observed release at any SWMU or AOC and where such investigation, whether being addressed during the inspection or after, does not have the necessary documentation in the facility record files.

_____ More Information Needed: There is no RFA, PA/VSI or RCRA closure information available.

PA/VSI Or RFA FILE REVIEW CHECKLIST

Notes

Briefly describe any documented (historical) releases for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

Perchloroethylene leak from above ground storage tank in 1987. 714gal leaked, 700 recovered and reclaimed, remaining 14gal removed in soil and gravel. 4yd^3 of contaminated soil and gravel recovered from area beyond fence line. Cleanup inspected and found to be adequate by IEPA

Briefly describe any releases observed during the inspection for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

PA/VSI Recommendations
Superfund NFA decision, previous file review by Todd Gmitro recommended NFA

RELEASED
DATE 10/22/96
RIN # 2944-56
INITIALS MV

CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

ENFORCEMENT CONFIDENTIAL

Completed by: Mary Wojciechowski
Date: February 24, 1992

RECEIVED
OCT 13

Background Facility Information

Facility Name: Akzo Chemicals Inc. McCook Research Facility
EPA Identification No.: ILD 000 805 705
Location (City, State): McCook, Illinois
Facility Priority Rank: Low

1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

Entire facility - 6 SWUMs

Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

( ) No corrective action activities initiated (Go to 5)
(X) RCRA Facility Assessment (RFA) or equivalent completed
( ) RCRA Facility Investigation (RFI) underway
( ) RFI completed
( ) Corrective Measures Study (CMS) completed
( ) Corrective Measures Implementation (CMI) begun or completed
( ) Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

( ) Operating permit
( ) Post-closure permit
( ) Enforcement order
(X) Other (Explain)

No actions are underway.

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

(X) Yes
( ) No
( ) Uncertain; still underway
( ) Not required

Additional explanatory notes:

Soil contamination was effectively remediated under IEPA supervision.

Facility Releases and Exposure Concerns

5. To what media have contaminant releases from the facility occurred or been suspected of occurring?

( ) Ground water
( ) Surface water
( ) Air
(X) Soils - Past release clean up approved by IEPA

6. Are contaminant releases migrating off-site?

( ) Yes; Indicate media, contaminant concentrations, and level of certainty.

Groundwater: _____
Surface water: _____
Air: _____
Soils: _____

(X) No
( ) Uncertain

7a. Are humans currently being exposed to contaminants released from the facility?

( ) Yes (Go to 8a)
(X) No
( ) Uncertain

Additional explanatory notes:

_____
_____
_____

7b. Is there a potential for human exposure to the contaminants released from the facility over the next 5 to 10 years?

( ) Yes
(X) No
( ) Uncertain

Additional explanatory notes:

_____
_____
_____
_____

8a. Are environmental receptors currently being exposed to contaminants released from the facility?

( ) Yes (Go to 9)
(X) No
( ) Uncertain

Additional explanatory notes:

_____
_____
_____
_____

8b. Is there a potential that environmental receptors could be exposed to the contaminants released from the facility over the next 5 to 10 years?

( ) Yes
(X) No
( ) Uncertain

Additional explanatory notes:

_____
_____
_____
_____

Anticipated Final Corrective Measures

9. If already identified or planned, would final corrective measures be able to be implemented in time to adequately address any existing or short-term threat to human health and the environment?

   ( ) Yes
   (X) No
   ( ) Uncertain

   Additional explanatory notes:

There is no need for corrective action at this facility.

10. Could a stabilization initiative at this facility reduce the present or near-term (e.g., less than two years) risks to human health and the environment?

    ( ) Yes
    (X) No
    ( ) Uncertain

    Additional explanatory notes:

There is no need for stabilization at this facility.

11. If a stabilization activity were not begun, would the threat to human health and the environment significantly increase before final corrective measures could be implemented?

    ( ) Yes
    (X) No
    ( ) Uncertain

    Additional explanatory notes:

Technical Ability to Implement Stabilization Activities

12. In what phase does the contaminant exist under ambient site conditions? Check all that apply.

    ( ) Solid
    ( ) Light non-aqueous phase liquids (LNAPLs)
    ( ) Dense non-aqueous phase liquids (DNAPLs)
    ( ) Dissolved in ground water or surface water
    ( ) Gaseous
    (X) Other No existing contamination

13. Which of the following major chemical groupings are of concern at the facility?

    (X) Volatile organic compounds (VOCs) and/or semi-volatiles
    ( ) Polynuclear aromatics (PAHs)
    ( ) Pesticides
    ( ) Polychlorinated biphenyls (PCBs) and/or dioxins
    ( ) Other organics
    ( ) Inorganics and metals
    ( ) Explosives
    ( ) Other _____

14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

( ) Yes; Indicate possible course of action.

(X) No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

There is no need for stabilization at this facility.

15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

( ) Yes
( ) No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

( ) Yes
( ) No

Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

( ) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

( ) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

Conclusion

18. Is this facility an appropriate candidate for stabilization activities?

( ) Yes
( ) No, not feasible
(X) No, not required

Explain final decision, using additional sheets if necessary.

In 1987, 714 gallons of perchloroethylene product leaked from an aboveground storage tank; 700 gallons were recovered and reclaimed. 14 gallons seeped into on-site soil which prompted the removal of 267 cubic yards of soil. IEPA approved this clean up.

There is no other history, evidence or suspicion of release from this facility.

MAR 1 3 1992

HRE-8J

Mr. Lawrence E. Keller
Senior Environmental Engineer
Akzo Chemicals, Inc.
300 South Riverside Plaza
Chicago, Illinois 60606

Re: Akzo Chemicals, Inc.
ILD 000 805 705

Dear Mr. Keller:

Per your request of March 12, 1992, enclosed please find a copy of the Preliminary Assessment/Visual Site Inspection for the referenced facility.

The executive summary and conclusions and recommendations section have been withheld as enforcement confidential.

If you have any questions, please contact me at (312) 886-4448.

Sincerely yours,
ORIGINAL SIGNED BY
KEVIN M. PIERARD

Kevin M. Pierard, Chief
Minnesota/Ohio Technical Enforcement Section
RCRA Enforcement Branch

Enclosure

HRE-8J:FHARRIS:6-2884:3/12/92:MASTER.RES

OFFICIAL FILE COPY

CONCURRENCE REQUESTED FROM REB			
OTHER STAFF	REB STAFF	REB SECTION CHIEF	REB BRANCH CHIEF
	FH 3/12/92	3-12-92	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

RECEIVED APR 08 1993
WMD RCRA
RECORD CENTER Comp.

REPLY TO ATTENTION OF:
5HR-12

August 5, 1991

Mr. Larry Keller
Akzo Chemicals Inc.
300 South Riverside
Chicago, IL 60606

Re: Visual Site Inspection
Akzo Chemicals Inc.
ILD 000805705

Dear Mr. Keller:

The United States Environmental Protection Agency (U.S. EPA) Region V will conduct a Preliminary Assessment and Visual Site Inspection (PA/VSI) at the referenced facility. This inspection is conducted pursuant to the Resource Conservation and Recovery Act, as amended (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA). The PA/VSI requires identification and systematic review of all solid waste streams at the facility. The objective of the PA/VSI is to determine whether or not releases of hazardous wastes or hazardous constituents have occurred or are occurring at the facility which may require further investigation. This analysis will also provide information to establish priorities for addressing any confirmed releases.

The visual site inspection of your facility is to verify the location of all solid waste management units (SWMUs) and areas of concern, and to make a cursory determination of their condition by visual observation. The VSI supplements and updates data gathered during a preliminary file review. During this site inspection, no samples will be taken. A sampling visit to ascertain if releases of hazardous waste or constituents have occurred may be required at a later date.

Assistance of some of your personnel may be required in reviewing solid waste flow(s) or previous disposal practices. The site inspection is to provide a technical understanding of the present and past waste flows and handling, treatment, storage, and disposal practices. Photographs of the facility are necessary to document the condition of the units at the facility and the waste management practices used.

The VSI has been scheduled for August 9, 1991, after the VSI at the adjacent Akzo facility. The inspection team will consist of Steve Mehay

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and Eric Turnquist of B&V Waste Science and Technology Corp., contractors for the U.S. EPA. Representatives of the Illinois Environmental Protection Agency (IEPA) may also be present. Your cooperation in admitting and assisting them while on site is appreciated.

The U.S. EPA recommends that personnel who are familiar with present and past manufacturing and waste management activities be available during the VSI. Access to any relevant maps, diagrams, hydrogeologic reports, environmental assessment reports, sampling data sheets, manifests and/or correspondence is also necessary, as such information is needed to complete the PA/VSI.

If you have any questions, please contact me at (312) 886-4448 or Sheri Bianchin at (312) 886-4446. A copy of the Preliminary Assessment/Visual Site Inspection Report, excluding the conclusions portion, may be made available upon request.

Sincerely yours,

Kevin M. Pierard, Chief
OH/MN Technical Enforcement Section

cc: Larry Eastep, IEPA - Springfield
Cliff Gould, IEPA - Maywood

PRC Environmental Management, Inc.
233 North Michigan Avenue
Suite 1621
Chicago, IL 60601
312-856-8700
Fax 312-938-0118

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

AKZO CHEMICALS, INC.
McCOOK RESEARCH FACILITY
McCOOK, ILLINOIS
ILD 000 805 705

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	R05032
EPA Region	:	5
Site No.	:	ILD 000 805 705
Date Prepared	:	December 13, 1991
Contract No.	:	68-W9-0006
PRC No.	:	109R05032IL03
Prepared by	:	B&V Waste Science & Technology Corp. Eric Turnquest
Telephone No.	:	(312) 346-3775
Contractor Project Manager	:	Shin Ahn
Telephone No.	:	(312) 856-8700
EPA Work Assignment Manager	:	Kevin Pierard
Telephone No.	:	(312) 886-4448

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TABLE OF CONTENTS

RELEASED
DATE 10/22/96
RIN # 2944-96
INITIALS MV

ENFORCEMENT
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EXECUTIVE SUMMARY

B&V Waste Science and Technology Corp. (BVWST), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Akzo Chemicals, Inc. McCook Research Facility (Akzo facility) in McCook, Illinois. This report summarizes the results of the PA/VSI and evaluates the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The Akzo facility is a research laboratory and pilot plant for the development of new processes and products. The facility has operated since 1961 and currently employs about 20 people. During the facility's peak operation between 120 and 140 were employed. Operations at the facility are currently being phased out and transferred to another location. The Akzo facility generates 17 hazardous waste streams. All the waste streams are currently generated in small quantities. The facility withdrew its RCRA Part B application and is currently going through closure of the entire facility.

The PA/VSI identified the following SWMUs at the facility:

Solid Waste Management Units

1. Interim Status RCRA Storage Pad
2. Satellite Spent Solvent Accumulation Area
3. Special Waste Dumpster
4. Wastewater Clarifier
5. Closed RCRA Storage Pad Area
6. Pitch Tanks

No AOCs were identified.

The potential for a release of hazardous constituents to groundwater, surface water and soils is low. SWMUs which handle hazardous waste are bermed and secured. The wastewater clarifier (SWMU 4) which is located below ground does not handle hazardous wastes. In the event of flooding, non-hazardous materials may be released.

The potential for release of hazardous constituents to air is low. SWMUs handling hazardous chemicals (SWMUs 1 and 2) are covered preventing release of volatile compounds. Non-hazardous constituents which may be found in the wastewater clarifier (SWMU 4) and pitch tanks (SWMU 6) are generally not volatile thus potential for release to air is low.

Receptors of potential releases at the Akzo facility include employees, residents in the surrounding villages, and flora and fauna in the area. Drinking water is provided from Lake Michigan. The nearest surface water is the Des Plaines River, approximately 0.75 miles away. The facility is fenced which limits access by potential receptors.

No further actions are suggested for the SWMUs found at the facility.

RELEASED
DATE 10/22/96
RIN # 2944-96
INITIALS MW

ENFORCEMENT
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1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. B&V Waste Science and Technology Corp. (BVWST) was contracted by PRC to perform the PA/VSI for the Akzo Chemicals Inc. McCook Research Facility (Akzo Facility).

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility.
- Obtain information on the operational history of the facility.
- Obtain information on releases from any units at the facility.
- Identify data gaps and other informational needs to be filled during the VSI.

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA.
- Identify releases not discovered during the PA.
- Provide a specific description of the environmental setting.
- Provide information on release pathways and the potential for releases to each medium.
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases.

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all SWMUs, identifying evidence of releases, initially identifying potential sampling locations, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Akzo facility in McCook, IL (ILD 000 805 705). The PA was completed on August 8, 1991. BVWST gathered and reviewed information from Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. The VSI was conducted on August 9, 1991. It included interviews with four facility representatives and a walk-through inspection of the facility. Five SWMUs and no AOCs were identified at the facility.

The VSI is summarized and 5 inspection photographs are included in Attachment A. Field notes from the VSI are included in Attachment B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, release history, regulatory history, environmental setting, and receptors.

2.1 FACILITY LOCATION

The Akzo facility is located at 8401 West 47th Street in the Village of McCook, Cook County, Illinois. Northwest Quarter of Section 11, Township 38 North, Range 12 East of the Third Principal Meridian; latitude 41°, 48' 16.9" north and longitude 87°, 50' 00.0" west (See Figure 1). The facility occupies approximately 15 acres (USGS, 1981).

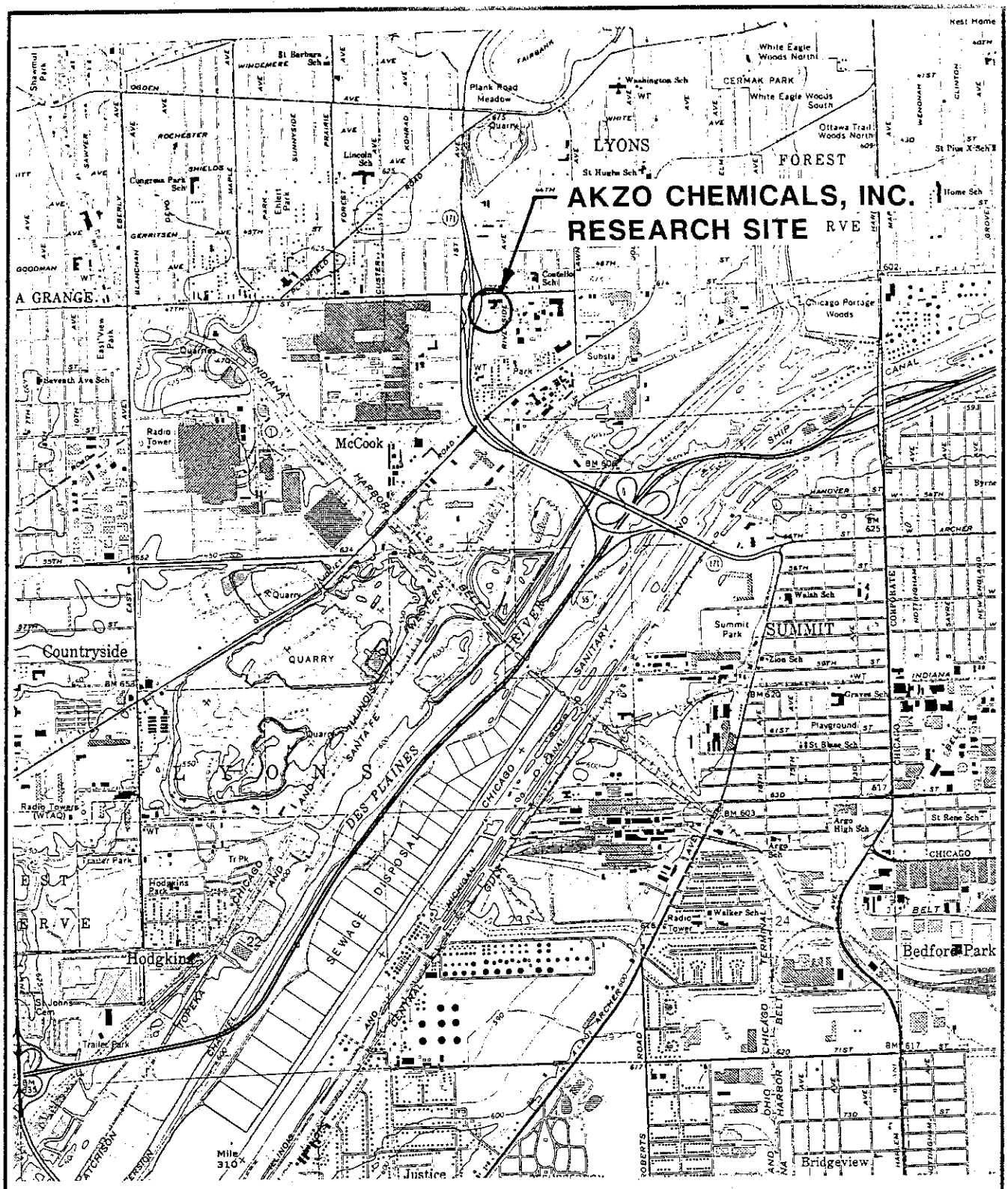
The Akzo facility is bordered on the north by Lyons Golf Range; on the west by Sante Fe railroad tracks, First Avenue (IL Route 171); on the south by vacant land (Akzo property), Public Service Co. of Northern Illinois (PSCNI), and residences; and on the east by the Akzo Chemical plant. The research center is surrounded by a security fence with two entrances.

2.2 FACILITY OPERATIONS

The primary activities performed at the Akzo facility are research and development of new products and processes. The facility also made limited quantities of products for orders which were not large enough for the production facility. The facility consists of a main building complex which includes laboratories, a pilot plant, a supply storage area, and an outside interim status RCRA storage pad (Figure 2). The facility occupies approximately 15 acres. There are presently three major categories of hazardous wastes stored at the facility: (1) Spent solvents generated by routine laboratory procedures and equipment cleaning are stored in the interim status RCRA storage pad; (2) Hazardous wastes considered hazardous due to ignitability, corrosivity, reactivity, or toxicity are stored in the interim status RCRA storage pad; (3) Off-specification or by-product chemicals are also stored in the interim status RCRA storage pad until disposed of offsite (Table 2). All wastes are disposed of offsite at various facilities. (Akzo 1990a, Akzo 1991a).

The facility has operated since 1961 and currently employs about 20 people. The facility employed approximately 120-140 people when in full operation (1982). The research site formally was engaged in research on new products, process improvements and applied research in the chemistry of fatty acids, esters, and the nitrogen derivatives thereof.

In 1990, the Chemicals division of Akzo decided to merge the two major research centers into a single location at Dobbs Ferry, NY. As a consequence, the McCook research center is in the process of closing (Akzo Chemicals, 1990d).



AKZO CHEMICALS, INC.
MCCOOK RESEARCH SITE
MCCOOK, ILLINOIS
RCRA FACILITY ASSESSMENT

FIGURE 1
FACILITY LOCATION

BERWYN, ILLINOIS
N4145 - 8745/7.5

SOURCE: U.S.G.S., 1980

WHITE SCIENCE AND TECHNOLOGY CORP.

CAD Dwg NO:C0001144
DATE:8-2-91 JOH
PLOT SCALE:1=1

47TH STREET

LOBBY

NEAR-EAST
PARKING LOT

RIVERSIDE AVENUE

LABORATORIES & OFFICES

SUPPLY
STORAGE
AREA

(STOREROOM)

CLOSED
RCRA
STORAGE
PAD
(SWMU 5)

PILOT
PLANT
AREA

PAVED AREA

SATELLITE SPENT
SOLVENT
ACCUMULATION
AREA (SWMU 2)

INTERIM STATUS
RCRA
STORAGE PAD
(SWMU 1)

PITCH TANKS
(SWMU 6)

SPECIAL
WASTE
DUMPSTER
(SWMU 3)

WASTEWATER
CLARIFIER
(SWMU 4)

N

50' 25' 0 50' 100'

1"=50'

AKZO CHEMICALS, INC.
MCCOOK RESEARCH SITE
MCCOOK, ILLINOIS
PA/VSI

FIGURE 2
FACILITY LAYOUT

BASE SCIENCE AND TECHNOLOGY CORP.

C0001149/f
6877TRI
OUTLINE
9-27-91

ACAD 10C7
1"=50'

TABLE 1

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
1	Interim Status RCRA Storage Pad	Yes	Active
2	Satellite Spent Solvent Accumulation Area	No	Active
3	Special Waste Dumpster	No	Active
4	Wastewater Clarifier	No	Active
5	Closed RCRA Storage Pad Area	Yes	Closed in 1987
6	Pitch Tanks	No	Active

Note:

* A RCRA hazardous waste management unit is one that currently requires or formerly required a RCRA Part A or Part B permit.

2.3 WASTE GENERATING PROCESSES

The Akzo Chemicals, Inc. McCook Research Center pilot plant and research laboratories have been operational since 1961. The facility is currently being shut down, with final closure anticipated in mid-1992. Regulatory closure of the interim status RCRA storage pad is also anticipated in 1992.

The McCook Research facility has conducted research and development for various Akzo Chemicals, Inc. product groups, including fatty acids, esters, and nitrogen derivatives; organic peroxides; polyurethane and other polymer-based paper chemicals; organic diisoyanate cross-linking agents for urethane elastomers; and other specialty organic chemicals. These R&D activities have included both product and process development via bench scale and pilot plant equipment.

Current Pilot Plant Activities

Pilot plant activities are currently focused on fatty chemistry, particularly fatty nitrogen derivatives. Chemical families produced include fatty nitriles, amines, substituted amines, amides, and quaternary ammonium compounds. Primary raw material feedstocks include fatty acids, fatty amines, fatty amides, and fatty alcohols. Reactants used to derivatize these feedstocks can include hydrogen, ammonia, ethylene oxide, propylene, oxide, methyl chloride, dimethyl sulfate, benzyl chloride, hydrogen peroxide, formaldehyde, acrylonitrile, acetic acid and sodium chloroacetate. Other materials used include metal-based catalysts and a variety of solvents, including alcohols, glycols, petroleum distillates, and acetone.

Much of the material produced by pilot plant activities are used by customers for trial purposes. Unused non-hazardous fatty nitrogen products are typically transferred to one of two 2,500-gallon pitch tanks at the facility and disposed of offsite. The currently operating fatty nitrogen processes do not routinely generate other by-products that must be disposed of as solid waste. Process wastewater is sent to the clarifier for gravity separation of floating fatty material and other solids. Effluent from the clarifier is discharged to a Publicly Owned Treatment Works (POTW).

A pilot plant built in 1985 for testing paper chemical additives is also currently in operation. The paper chemicals pilot plant performs physical testing of paper material for porosity, sizing response, tensile strength, and other characteristics.

Historical Pilot Plant Activities

Other pilot plant activities that have occurred during the history of the facility include the following:

1. Methyl alkyl ketone production (1970s), involving reaction of carboxylic acids and acetic acid to produce methyl alkyl ketone used by customers as animal repellents and as intermediates in flavoring and fragrance production.

2. Organic diisoyanate production (1980s), involving reaction of amides with chlorine to produce disubstituted ureas, followed by reaction with hydrochloric acid and ammonium hydroxide in the presence of perchloroethylene (PCE), to produce diisoyanates. These compounds were used by customers in urethane elastomer applications.

3. Polyurethane and other copolymer production (1980s and 1990s), involving reactions of diisoyanates with organic monomers in the presence of solvent to produce polymers used as paper sizing agents.

4. Isothioronium compound production (1960s and 1970s), involving the reaction of thiourea and alkyl halides. The isothiouronium compounds were used by customers in copper ore processing applications.

5. β-amine compound production (late 1960s to early 1980s), involving reactions of α-olefins in the presence of hydrofluoric or sulfuric acid, followed by hydrolysis with ethanol and caustic. The β-amines were used by customers in petroleum refining applications.

6. Miscellaneous other pilot plant processes, including oleic acid acylation, fatty ester sulfonation, fatty amine and fatty amine derivative distillation, ether amine production, and porous polymer manufacturing involving ethoxylated amines.

Laboratory Activities

Laboratory activities that have been conducted at the site can be broadly classified as organic synthesis, customer applications, and analytical support. Customer applications laboratories were operated for asphalt chemicals, mining surfactants, softeners and detergents, oil well chemicals, biocides (herbicides), agricultural products; paper chemicals, and organic peroxides.

Waste solvents generated by the laboratory activities have historically been segregated by category and disposed of offsite in accordance with applicable regulations. Hazardous laboratory chemicals disposed of as a result of the closure activates have been disposed of via labpack in accordance with EPA regulations. Non-hazardous laboratory chemicals have been disposed of via offsite landfill or offsite incineration.

Waste Stream Descriptions

Waste material categories generated at the McCook Research facility have included the following:

- Non-hazardous fatty materials (excess feedstock, product, distillation residues, etc.) accumulated in the pitch tanks (SWMU 6) and disposed of by incineration at an offsite Akzo facility.

- Non-hazardous solids, accumulated in the special waste dumpster (SWMU 3) and disposed of by offsite landfill. These include empty containers, non-hazardous laboratory chemicals, rags, and other non-hazardous materials.

- Spent pilot plant cleanup and laboratory solvents. These are currently segregated in the satellite spent solvent accumulation area (SWMU 2) into the following categories: chlorinated solvents, non-halogenated solvents, solvents with organic acids, and solvents with organic bases.

- Perchloroethylene-containing filtercake and still bottoms from pilot plant diisoyanate production are stored in drums in the interim status RCRA storage pad (SWMU 1).

- Waste acetone and xylene from polyurethane-based paper sizing agent production are stored in drums in the interim status RCRA storage pad (SWMU 1).

- Distillation residues from methyl alkyl ketone and β-amine production are stored in drums in the interim status RCRA storage pad (SWMU-1).

- Sludge from the wastewater clarifier (SWMU 4).

- Miscellaneous wastes for offsite disposal, including excess laboratory reagents and products, unused pilot plant raw materials, filter aid containing spent metal catalysts, and sodium chloride-based slat cake are stored in the interim status RCRA storage pad (SWMU 1).

All of the above materials have historically been disposed of offsite in accordance with applicable regulations. Wastes generated as a result of ongoing pilot plant and laboratory activities, as well as wastes generated as a result of the facility closure, will continue to be disposed of in accordance with current RCRA and other applicable solid waste regulations.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit
Sludge contaminated with Perchloroethylene	Pilot Plant	1
Liquids containing 2,4-D	Laboratory	1, 2
Acid Chlorides, Corrosive Liquids, Reactive/D002, D003	Laboratory	1, 2
Listed spent solvents, Ignitable, from laboratory/D001, F003	Laboratory	1, 2
Acrylonitrile/U009	Laboratory	1
Corrosive Liquid Waste (Propylamines), Flammable/D001, D002	Pilot Plant	1
Ignitable mixture of spent acetonitrile, diglyme/D001	Pilot Plant	1
Ignitable mixture of spent IPA + glycol/D001	Pilot Plant	1
Ignitable mixture of Hexane + Diglyme /D001	Pilot Plant	1
Ignitable mixture of IPA + Acetic Acid /D001	Pilot Plant	1
E-P Toxic Mercuric Acetate/D009	Laboratory	1, 2
Excess Lab Product Containing Xylene, Ignitable/U239	Laboratory	1, 2
Waste reactive cyanide-containing liquid	Laboratory	1, 2
Excess formaldehyde solution/U122	Pilot Plant	1
Non-hazardous solids	Various	3
Wastewater clarifier sludge	Pilot Plant	4
Non-hazardous fatty materials	Pilot Plant	6

2.4 DOCUMENTED RELEASE HISTORY

This section discusses the history of releases to soil at the Akzo Chemicals, McCook Research Site facility.

In 1987, it was reported by Akzo to the IEPA that approximately 714 gallons of perchloroethylene (RCRA waste U210) had been leaking from an above ground storage tank for an unknown period of time. 700 gallons were recovered on site and reclaimed. Fourteen gallons were removed in 267 cubic yards of contaminated soil and gravel. No free liquid was observed migrating off site; however, approximately four cubic yards of contaminated soil and gravel were recovered from an area beyond the fence line (Akzo Chemicals, 1987 and IEPA, 1987d). The cleanup was inspected by the IEPA and found to be adequate.

No other releases have been reported or verified.

2.5 REGULATORY HISTORY

The facility submitted its first RCRA Part A permit application in November 1980. This application listed process codes for container storage (S01), tank storage (S02) and tank treatment (T01). Wastes that were included on the original application were F002 (halogenated spent solvents), F005 (non halogenated spent solvents), D001 (ignitable) and D009 (mercury). All wastes were listed under container storage (S01) (Akzo Chemicals, 1980). No wastes were listed under tank storage (S02) or tank treatment (T01). In 1987 the storage area (S01) was closed (IEPA, 1987c). The facility was inspected in November 1988 (IEPA) and found to be in accordance with approved closure plan dated 1987 (IEPA, 1987a). In 1988 a potential hazardous waste site, preliminary assessment concluded that the site had a low priority for potential of release of hazardous constituents to the environment (IEPA, 1988b).

In 1988 the facility submitted a RCRA Part B application (IEPA, 1990a). A Part B permit was issued for public comment in September (IEPA, 1990a). The permit application was withdrawn in October 1990 due to the planned closure of the facility (IEPA, 1990a and IEPA, 1990b). There have been no RCRA inspections.

The Akzo facility has been granted several air permits since 1980. In 1983, it was granted a permit for expansion of the Hofmann Pilot Plant (IEPA, 1983a). It was also granted a two year operating permit for emissions of organic material from the pilot plant expansion (IEPA, 1983b). In 1985 the operating permit for emissions of organic material from the Hofmann Pilot Plant was extended to 1988 (IEPA, 1985a).

Also in 1985 a construction and operating permit (5 yr.) was granted for the emissions of nitrogen oxides and carbon monoxide from a portable steam boiler (gas fired) (IEPA, 1985b). In 1987 the facility was inspected and found to be in compliance with the applicable air regulations and permits (IEPA, 1987d). In 1987 Akzo ceased operation of the Hofmann Pilot Plant and withdrew its operating permit in January 1988 (IEPA, 1988a). The facility was inspected in 1988 and was found to be in compliance with applicable air regulations (IEPA, 1988b). In 1989, Akzo was granted a joint construction and operating permit (89050080) for Pilot Plant Powder Blending with baghouses (IEPA, 1989). The operating permit was granted for emissions of particulates. There have been no violations of any air regulations or permits by the facility. The facility does not have any NPDES or water discharge permits.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the Akzo facility.

2.6.1 Climate

The climate in Cook county is classified as the humid continental type. The average daily temperature is 49.0°F. The lowest average daily minimum temperature is 13.3°F in January. The highest average daily maximum temperature is 82.4°F in July (U.S. Department of Agriculture, 1979).

The total annual precipitation is 33.34 inches. Of this, 22 inches, or about 67%, usually falls in April through September. Thunderstorms occur on about 37 days each year. The heaviest 24-hour rainfall was 9.35 inches in August, 1987 (National Weather Bureau, 1991). The mean annual lake evaporation for the area is 32 inches (IEPA, 1976).

The average seasonal snowfall is 39 inches. On the average, at least one inch of snow is on the ground for 32 days of the year.

The prevailing wind is from the west in winter, from the west and south-southwest in the spring, from the southwest in the summer, and from the south and southwest in the fall (Ruffner, 1977). The average wind speed is 10.3 mph.

2.6.2 Flood Plain and Surface Water

According to the Flood Insurance Rate Map series produced by the Federal Emergency Management Agency (FEMA), the facility lies in Zone C and is therefore not located within the 500-year flood plan. Surface runoff from the pilot plant area is channeled into the wastewater clarifier (SWMU 4) and discharged to a publicly owned treatment works (POTW). The surface around the pilot plant is sloped to drain into grated channels which flow into the wastewater clarifier (SWMU 1). The 2 drum storage areas (SWMUs 1 and 2) are diked to prevent runoff. The interim RCRA storage pad is sloped inside the dike to a collection sump. The sump discharges to the wastewater clarifier (SWMU 4).

The nearest surface water to the Akzo facility is the Des Plaines river which lays southeast, approximately 3/4 mile at its closest point to the facility. The Chicago Sanitary and Ship Canal, Illinois and Michigan canal are located on the far side of the Des Plaines River. A segment of Salt Creek also lays within 1 mile of the facility. The Salt Creek joins the Des Plaines River in this area north of the facility (USGS, 1981).

2.6.3 Geology and Soils

No site-specific geology information was available during the PA/VSI for the Akzo facility.

The surficial geology of the area is characterized by built-up urban areas and deep, nearly level, poorly drained soils that have a silty and clayey subsoil. These soils are formed in glacial lake sediment (U.S. Department of Agriculture, 1979). Geology at the site is thought to be comprised of an unknown thickness of glacial deposits (lacustrine clay, till, and outwash) over Paleozoic sedimentary rock units. No site-specific information on the stratigraphy is presently available. However, a detailed statewide study by Berg and Kempton (1988) provides regional three-dimensional mapping of geologic materials to a depth of 50 feet. Their map suggests a discontinues alluvium less than 20 feet thick, over a silty clayey till of less than 20 feet. The bedrock surface is expected to be between 20 and 50 feet below the surface. The bedrock is expected to be Silurian and Devonian rock, mainly dolomites (Berg, 1988).

2.6.4 Groundwater

Groundwater is obtained from four major aquifer systems in northeastern Illinois -- the glacial drift system, the shallow bedrock system, and two deep bedrock systems. They are distinguished by their hydrologic properties and recharge source areas (Hughes et al., 1966). In central Cook County the glacial

drift is thin and sand and gravel deposits are correspondingly thin or are absent. Virtually all wells drilled will have to penetrate bedrock for groundwater supplies. (Bergstrom et al., 1955).

The shallow bedrock aquifer system in northeastern Illinois underlies the glacial drift system and is comprised of the Silurian dolomite formations and underlying upper Ordovician shales. The upper boundary of this system is the bedrock-drift contact, and the lower boundary is the top of a sequence of formations of middle Ordovician age called the Galena-Platteville Dolomite. Water from this aquifer is obtained from fractures and solution openings in the Silurian dolomite beds (Hughes et al., 1966). The facility lies in an area where dolomite lies directly below the glacial drift which yields groundwater through open crevices and channels (Bergstrom et al., 1955). The shallow bedrock aquifer system is recharged locally from precipitation (Hughes et al., 1968).

The deep bedrock aquifer systems include the Cambrian-Ordovician aquifer system and the Mt. Simon aquifer system. The Cambrian-Ordovician aquifer system contains two major aquifers, the Glenwood-St. Peter aquifer and the Ironton-Galesville aquifer. The top of the Cambrian-Ordovician aquifer system is at the top of or within the Galena-Platteville Dolomite, which serves as the lower boundary for the shallow bedrock aquifer system. The Glenwood-St. Peter aquifer is widely utilized where water requirements are less than 200 gallons per minute (gpm). This unit has a permeability of between 9 and 15 gallons per day per square foot (gpd/sq. ft.). The Ironton-Galesville Sandstone aquifer has a more consistent permeability (between 30 and 40 gpd/sq. ft.) than the other aquifers in northeastern Illinois. Recharge to the deep bedrock aquifer systems is mostly from west and north of the six county metropolitan area, where rocks crop out at the surface or lie immediately below the glacial drift. Minor recharge does occur through leakage downward through the shallow bedrock aquifer system (Hughes et al., 1966).

The Mt. Simon aquifer system is bounded above by the relatively impermeable shales and dolomites of the upper and middle parts of the Eau Claire Formation and below by the crystalline Pre-Cambrian Formation. The Eau Claire Formation acts as a confining layer for the Mt. Simon aquifer system. The average permeability of the aquifer system is 16 gpd/sq. ft. (Hughes et al., 1966) and recharge is largely form the out crop region of Cambrian rocks in central southern Wisconsin (Willman, 1971).

No site-specific hydrogeology information was available during the PA/VSI for the Akzo facility.

2.7 RECEPTORS

The Akzo facility occupies approximately 15 acres in the village of McCook, Illinois. McCook is 4-5 square miles in area, with a population of 303 in the village limits (IL Blue Book, 1987). McCook is located in the Chicago metropolitan area (population - 10 million). In the 2 mile radius there are the villages of Brookfield (19,395 pop.), Countryside (6,510 pop.), Forest View (743 pop.), LaGrange (15,690 pop.), Lyons (9,925 pop.), Riverside (8,753 pop.), and Summit (10,110 pop.). There are approximately 20 schools within the 2 mile radius of the facility (IL Blue Book, 1987).

The facility is bordered on the north by 47th Street and Village of Lyons residential; on the west by Sante Fe railroad line and First Avenue (IL 171); on the south by vacant land (Akzo property), Public Service Co. of Northern Illinois and residences; and on the east by the Akzo Chemicals Plant. The facility is secured by a fence.

The McCook Research Center and the village of McCook are supplied with Lake Michigan water (Chicago water) for potable water. No wells have been drilled on the facility property. The closest groundwater well lies 1/2 mile from the facility at Universal Oil Products Co. (UOP).

Sensitive environments in the facilities area (2 mi. radius) include sections of Salt Creek, Des Plaines River and Chicago River. Also located in the area are approximately 12 square miles of forest preserves (Plank Road Meadow, Zoo Woods, Brookfield Woods, White Eagle Woods, Ottawa Trail Woods, Chicago Portage Woods) and Brookfield Zoological Park. The forest preserves support a variety of flora and fauna common to a wooded habitat.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the five SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of release, and BVWST observations.

SWMU 1	**Interim Status RCRA Storage Pad**
Unit Description:	The container storage area is located outdoors, in the southwest section of the research facility site (Photo 1). The maximum volume of hazardous waste to be stored in the storage area is 11,000 gallons, corresponding to a maximum of 200 55-gallon drums. Hazardous wastes which are reactive or corrosive are stored in separate containment areas of the hazardous waste storage areas.
Date of Startup:	This unit began operation in 1987.
Date of Closure:	This unit is currently operating. Closure is expected when the entire facility closes.
Wastes Managed:	Wastes managed at this unit are listed in Table 2. This unit handles all chemical waste streams from the facility.
Release Controls:	The storage area consists of a diked concrete base, surrounded by a seven-foot high chain link fence topped with barbed wire. The concrete is coated with a chemical resistant epoxy sealer. The hazardous waste storage area has a secondary containment capacity of 4,371 gallons with the eight inch dike. This includes the capacity needed to collect all the run-on from a 24-hour, 25-year storm event. The concrete base also contains a sump to allow collection of rainwater or spills.
History of Release:	No releases from this unit have been documented.

Observations:	This area is locked at all times. The concrete pad and dike were in good conditions. There were no visible stains on the concrete surface. The drums stored in the area were in good condition through visible inspection.
SWMU 2	**Satellite Spent Solvent Accumulation Area**
Unit Description:	The area is located outdoors in the southwest area directly behind the facility building. The concrete diked area (approximately 1 foot) is used for satellite accumulation of waste solvents from laboratory activities (Photo 2).
Date of Startup:	This unit was built and began operation in 1989.
Date of Closure:	This unit is currently operating. Use at this area is minimal because the majority of laboratories are closed. Full closure of this area is expected when the facility closes.
Wastes Managed:	Spent solvents and chemicals from laboratory procedures.
Release Controls:	The area is diked with concrete (approximately 1 foot). Each collection drum has a covered funnel attached.
History of Release:	No releases from this unit have been documented.
Observations:	Area was clean with no evidence of spills or leaks. The water adjacent to the dike which was present during the VSI was due to an earlier rain.
SWMU 3	**Special Waste Dumpster**
Unit Description:	This unit is a 20 cubic yard open top dumpster which is used for non RCRA solid wastes (Photo 3).
Date of Startup:	The dumpster used for non-hazardous special waste disposal is a portable unit. The area currently used for the dumpster has been used for this purpose since the facility was built in 1961.

Date of Closure:	The unit is currently active. Closure of the unit will occur when the entire facility closes.
Wastes Managed:	Any non hazardous wastes which are generated from the pilot plant and/or laboratories.
Release Controls:	The dumpster is located on a paved surface.
History of Release:	No releases from this unit have been observed or documented.
Observations:	Dumpster is regularly emptied. No visible signs of release or leaks from the unit. Puddle of water adjacent to unit observed during the VSI was due to an earlier rain.
SWMU 4	**Wastewater Clarifier**
Unit Description:	The unit is metal placed inside of concrete (Photo 4). Below grade unit collects runoff and spills from pilot plant area. Water and non-hazardous fatty materials are separated in unit. Effluent from the clarifier is discharged to a POTW. Fats, oils and grease from this unit are taken to another Akzo facility for fuel blending.
Date of Startup:	The wastewater clarifier was part of the original pilot plant built in 1961.
Date of Closure:	The unit is currently active. Closure will occur when the entire facility is closed.
Wastes Managed:	Any runoff or spills from the pilot plant.
Release Controls:	The unit is situated within an impervious concrete dike.
History of Release:	No releases from the unit have been documented.
Observations:	No evidence of release or overflow was observed.

SWMU 5	**Closed RCRA Storage Pad Area**
Unit Description:	This unit formally handled RCRA wastes (Photo 5). An addition to the facility was located over this area in 1987.
Date of Startup:	This unit was established as an interim status RCRA storage area in 1980.
Date of Closure:	Closure of this unit was granted by the Illinois EPA in 1987. The closure was certified by an independent registered professional engineer, in accordance with IEPA and USEPA requirements.
Wastes Managed:	Formerly those found in Table 2. None currently.
Release Controls:	None. Unit is closed. The unit was fenced.
History of Release:	No releases from this unit have been documented.
Observations:	The area where the unit was located is currently a building.
SWMU 6	**Pitch Tanks**
Unit Description:	This unit consists of two pitch tanks which collect materials from the pilot plant.
Date of Startup:	The pitch tanks were part of the original pilot plant built in 1961.
Date of Closure:	The unit is currently active. Closure will occur when the entire facility is closed.
Wastes Managed:	Non-hazardous fatty materials accumulated (excess feed stock, product, distillation residues, etc.).
Release Controls:	The pitch tanks are located in the area surrounded by dikes which lead into the wastewater clarifier (SWMU 4).

History of Release:	No releases from this unit has been documented.
Observations:	No evidence of release was observed.

4.0 AREAS OF CONCERN

No areas of concern were observed at this facility during the VSI.

RELEASED
DATE 10-24-96
RIN # 2944-96
INITIALS MU

ENFORCEMENT
CONFIDENTIAL

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified six SWMUs and no AOCs at the Akzo facility. Background information on the facility's location, operations, waste generating processes, release history, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, release history, and observed condition, is discussed in Section 3.0. AOCs are discussed in Section 4.0. Following are conclusions and recommendations for each SWMU and AOC. Table 3 identifies the SWMUs at the Akzo Chemicals, McCook Facility and suggested further actions.

SWMU 1 **Interim Status RCRA Storage Pad**

Conclusions: This concrete area is located outside in a remote corner of the facility. The possibility of spills or release to all environment media is low due to the concrete dike and sump. The area is fenced and locked regularly which limits entry to the drum pad. The condition of the area is good with no signs of leaks on the concrete base. The drums present in the area were in good condition.

Recommendations: No further action is suggested at this time.

SWMU 2 **Satellite Spent Solvent Accumulation Area**

Conclusions: This concrete area is located outside of the facility. This area is used for satellite accumulation of waste solvents from laboratory activities. The possibility of a spill or release to all environment media is low. In the event of flood or extreme rainfall (24 hr., 25-year storm event) the dike may overflow. There is a low potential for release to air because all drums have capped funnels.

Recommendations: No further actions are suggested at this time.

RELEASED
DATE 10-22-96
RIN # 2944-E
INITIALS MV

TABLE 3

SWMU SUMMARY

ENFORCEMENT CONFIDENTIAL

SWMU	Operational Dates	Evidence of Release	Suggested Further Action
Interim Status RCRA Storage Pad	1987 to present	None	No Further Action
Satellite Spent Solvent Accumulation Area	1989 to present	None	No Further Action
Special Waste Dumpster	1961 to present	None	No Further Action
Wastewater Clarifier	1961 to present	None	No Further Action
Closed RCRA Storage Pad	1980 to 1987	None	No Further Action
Pitch Tanks	1961 to present	None	No Further Action

RELEASED
DATE 2944-96
RIN # 10-22-96
INITIALS MV

ENFORCEMENT
CONFIDENTIAL

SWMU 3 **Special Waste Dumpster**

Conclusions: This dumpster is located on a paved area outside the facility. There is a low potential for a release to all environmental media. The potential for release is dependant on the integrity of the dumpster and the amount of precipitation which falls on it.

Recommendations: No further actions are suggested at this time.

SWMU 4 **Wastewater Clarifier**

Conclusions: This unit is located outside the facility by the pilot plant. There is no potential for release to air because of the nature of the material. There is a low to moderate potential for release to the groundwater, surface water and onsite soils depending on the integrity of the unit. However, due to the nature of the materials handled by this unit (non RCRA waste), the overall significance of a release by this unit is low. The integrity of the unit appeared good.

Recommendations: No further actions are suggested at this time.

SWMU 5 **Closed RCRA Storage Pad Area**

Conclusions: This unit was located outside of the facility. In 1987, the unit went through formal closure procedures. No evidence of release was found during the closure. There is no potential for release to any environmental media.

Recommendations: No further actions are suggested at this time.

SWMU 6 **Pitch Tanks**

Conclusions: This unit is located on the pilot plant. The ground below it is concrete and diked to prevent any release in the event of a spill. The unit does not handle any hazardous materials. Therefore, there is a low potential for release to groundwater, surface water, and soil.

Recommendations: No further actions are suggested at this time.

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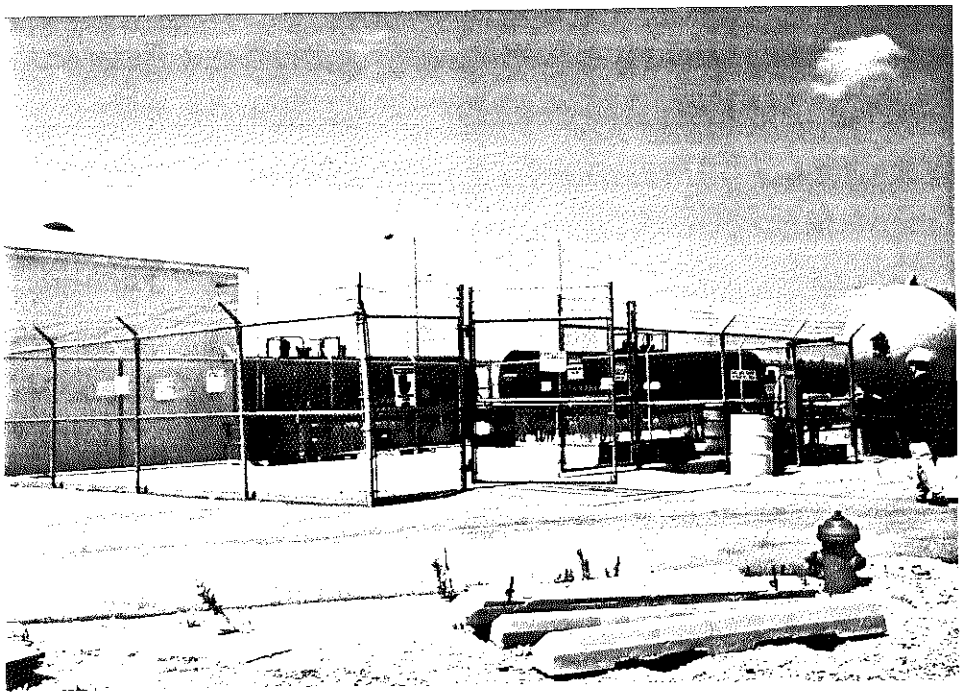
ATTACHMENT A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

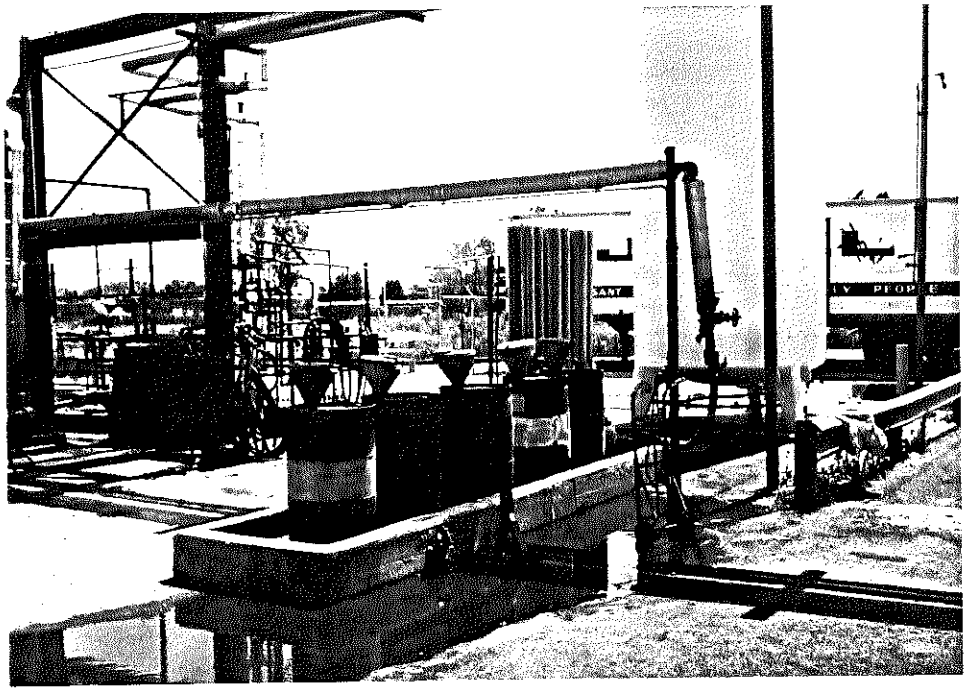
Akzo Chemicals, Inc.
McCook Research Site
McCook, Illinois
ILD 000805705

Date:	September 9, 1991
Facility Representatives:	Lawrence E. Keller, Senior Environmental Engineer Richard J. Hanzlik, Environmental Engineer Charles Plank, Production Manager Richard Dolinsky, Production Supervisor
Inspection Team:	Eric Turnquest, BVWST Stephen Mehay, BVWST
Photographer:	Stephen Mehay
Weather Conditions:	Clear, temperature approximately 80°F.
Summary of Activities:	The Visual Site Inspection (VSI) for both Akzo Chemicals, Inc. facilities (McCook Research Site and Chemical Plant) were conducted the same day. The VSI began at 12:30 PM with an introductory meeting. The purpose of the VSI and RCRA facility assessment was discussed. Mr. Keller and Mr. Hanzlik proceeded to explain the facility layout and SWMUs. Specific questions were then answered by representatives present. The tour of the facility began after the introductory meeting at 1:10 PM. Each of the SWMUs were inspected and photographed. The area where the tetrachloroethylene spill had occurred in 1987 was also visually inspected and photographed. The exterior tour concluded at approximately 2:00 PM. A tour of the interior of the facility then occurred. The majority of laboratories and offices had been closed and emptied. No photographs of the interior of the facility were taken. The VSI was then concluded at 2:30 PM.



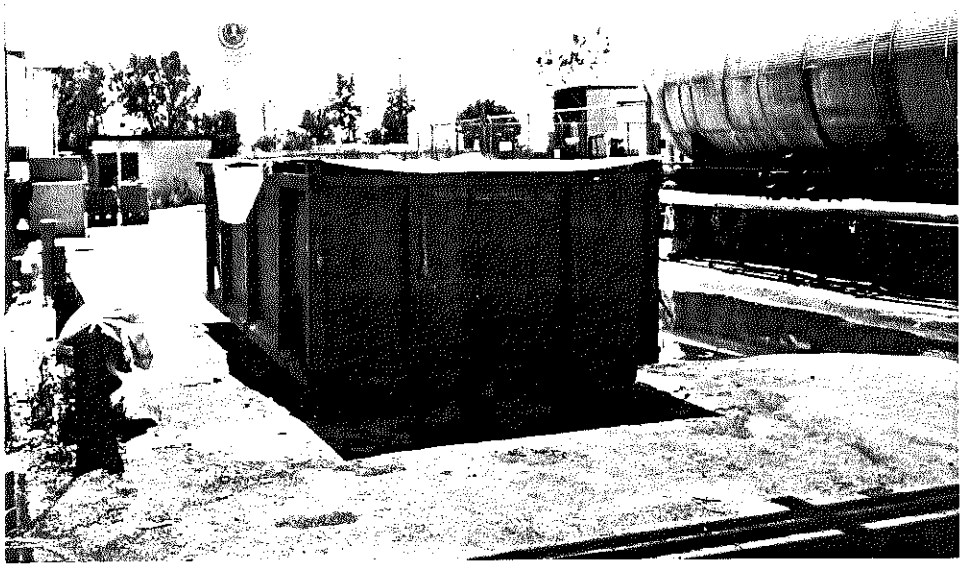
Photograph No. 1
Orientation: West
Description: Interim Status RCRA Storage Pad

Location: SWMU 1
Date: 08/09/91



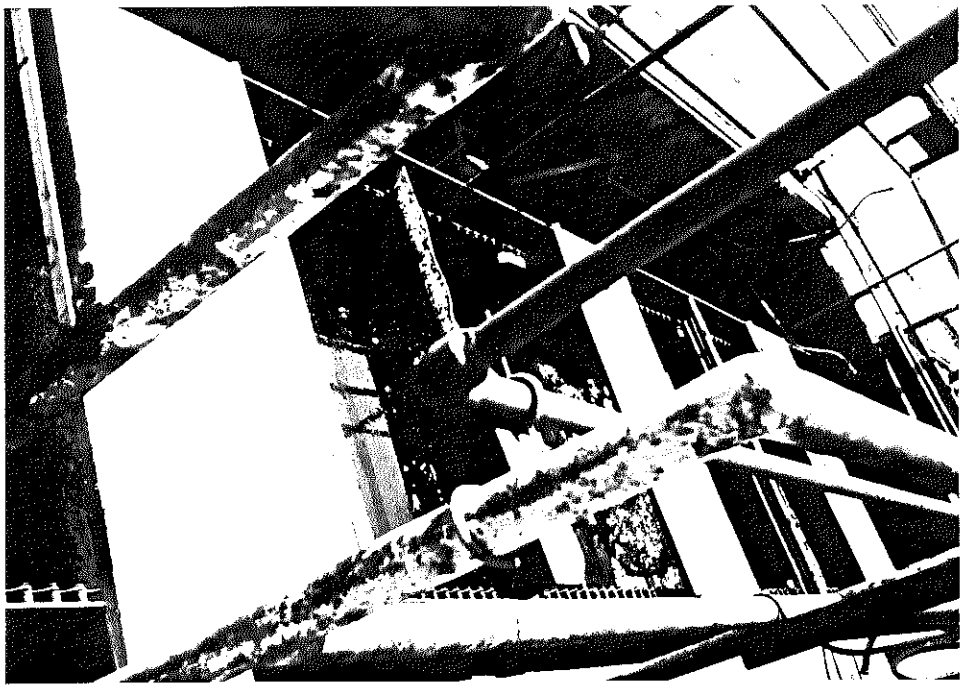
Photograph No. 2
Orientation: Southeast
Description: Satellite Spent Solvent Accumulation Area (Foreground)
and Pitch Tank (Background)

Location: SWMUs 2 & 6
Date: 08/09/91



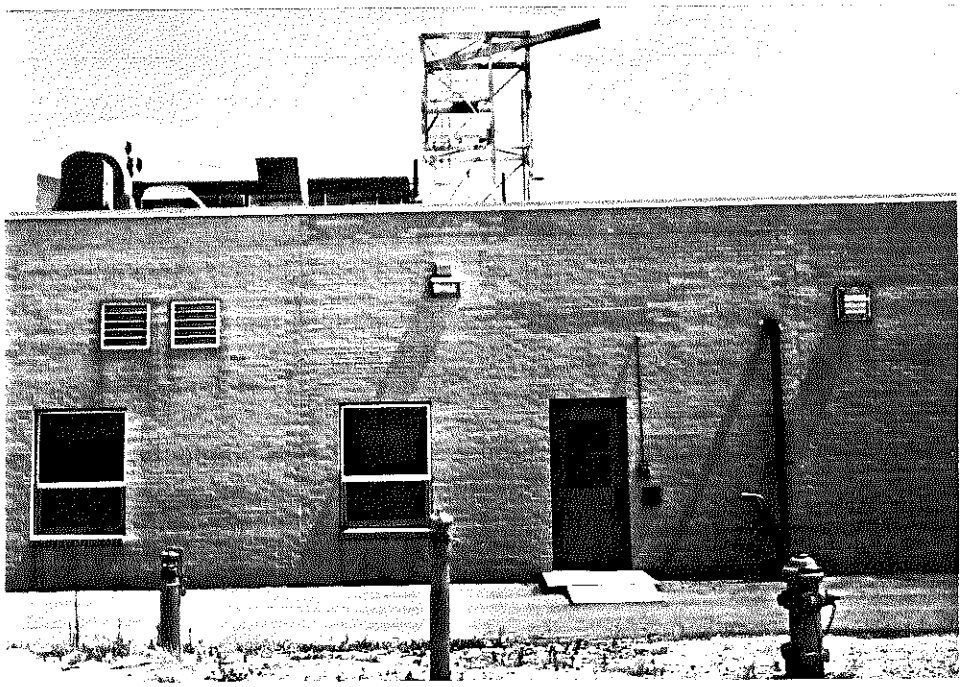
Photograph No. 3
Orientation: Southwest
Description: Special Waste Dumpster

Location: SWMU 3
Date: 08/09/91



Photograph No. 4
Orientation: Southwest
Description: Waste Water Clarifier

Location: SWMU 4
Date: 08/09/91



Photograph No. 5
Orientation: East
Description: Closed RCRA Storage Pad Area

Location: SWMU 5
Date: 08/09/91

ATTACHMENT B

VISUAL SITE INSPECTION FIELD NOTES

Projects (continued)

Eric M Tungent 8/9/91

- McCook Research Center USI

- Arrived at Site 1230
- Weather clear ~80°F
- Akzo personnel - Larry Keller
  Rich

- BVWST personnel - Steve Mehay

- 1230 - Discussed current operations and Facility layout.

- 1) Research Labs
  - clean
- 2) Pilot plant
  - for products at plants
  - smaller quantities of special products

currently
- paper product pilot plant
- Fatty acids production
  - limited waste generation

Eric M. [signature] 8/9/91

- historically
  - Hoffman reactors - shutdown 1986
    - dissogenate
      - market development

currently
- RCRA pad - interim 1992
  - submitting closure plan
- special waste dumpster
- accumulation area for lab solvents
- empty drum storage area
- old RCRA pad
  - closed 1987

→ no underground tanks
- 1987 chloroethane spill
  - documented - soil removed

- sewer discharge joins plant effluent before sample station
- potable water from Mc Cook
- 20 employees (120-140 when in full operation 1982)

Eric M. [signature] 8/9/91

15 - pilot plant
remaining other operations

- Fatty nitrogen pitch → burned at Morris plant.

- test products pumped into pitch and sent to Morris plant when they were no longer used.

Hazardous wastes all stored on pads → disposed offsite.

Facility pictures
1) Chloroethane spill location (1987)
2) Old RCRA pad location closed 1987 - addition to building put in area (W)
3) Lab solvents & wastes different containers for different chemicals (SW)

Eric Turgeon 8/9/91

4) Special non-hazardous waste dumpster. Only non haz waste (Liquid disposal of last load) (SE)

5) RCRA Pad sloped runoff goes to sewer 1'2" → 12" burm (NE)

6) Runoff oil/water separator → sewer

EPA 031174'09

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000805705

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Armak Industrial Chemicals Research Laboratory	3401 W. 47th

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
McCook	IL	60525	Cook	031	5

09 COORDINATES LATITUDE	LONGITUDE
41 48 16.	87 50 00.

10 DIRECTIONS TO SITE (Starting from nearest public road) East on 47th Street from 1st Ave (IL 171) to 8401 (on the south side of 47th Street).

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
			( )

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: 08/12/80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / / (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 12/10/80 (MONTH DAY YEAR)

BY (Check all that apply)
☒ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
1961 (BEGINNING YEAR) | _____ (ENDING YEAR) ☐ UNKNOWN

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E.P.A. — D.L.P.C.
STATE OF ILLINOIS

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Solvents (Toxic/Persistent/Ignitable)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Groundwater (Population/Environment) Direct Contact (Population)
Vapor Release (Population/Environment)
Fire Explosion (Population/Environment)

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Clifford Goulds	IEPA/DLPC, Maywood FOL	(312) 345-9780

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Clifford Goulds	IEPA	DLPC/FOL	(312) 345-9780	01/17/84 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000605705

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- A SOLID
- B POWDER, FINES
- C SLUDGE
- D OTHER ____ (Specify)
- E SLURRY
- X F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

- TONS 2.5
- CUBIC YARDS
- NO OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)

- X A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- X D PERSISTENT
- E SOLUBLE
- F INFECTIOUS
- X G FLAMMABLE
- X H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	2.5	TN	D001, F002, F005 per EPA Form 3500-10.
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

State files in Maywood Regional Office DLPC, IEPA.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000805705

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >40,000 — 04 NARRATIVE DESCRIPTION: Based on information obtained from facility Part A, and contained in IEPA file, the site stores ignitabe and toxic solvents resulting from research into the chemistry of fatty acids, esters + nitrogen derivitives thereof. Area is served by city water, received from Chicago.

01 [ ] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 [X] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >40,000 — 04 NARRATIVE DESCRIPTION: The release of the wastes identified in facility Part A could result in air pollution. See also II D below.

01 [X] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >40,000 — 04 NARRATIVE DESCRIPTION: Based on information contained in facility Part A, hazardous waste which could burn or explode are stored on site.

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: <250 — 04 NARRATIVE DESCRIPTION: Based on information contained in facility Part A, the firms employees might come into direct contact with the waste stored on site. General public would not because site is secure.

01 [ ] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

01 [ ] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 [X] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: <250 — 04 NARRATIVE DESCRIPTION: See II E.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: >40,000 — 04 NARRATIVE DESCRIPTION: Population exposure from groundwater, air, direct contact with hazardous constituents stored at the facility

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000605705

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills runoff standing liquids leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION Release of hazardous materials stored at site could result in its entering storm sewers and the Illinois Sanitary and Ship Canal.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 240,000

IV. COMMENTS

This is a storage facility regulated under 35 ILL Adm Code Title III Part 725. Although there is potential for a release of hazardous constituents to the environment, this type of occurrence is unlikely

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

See Part 2, Item VI

EPA FORM 2070-12 (7-81)

SOIC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

TO: Division File DATE: 1/17/83

FROM: C. Gould

☐ Information only

SUBJECT: 0311409 / Cook Co ~~McCook~~ / Armak Research Lab
ILD000805705

☐ Response requested

Attached is the PA done on the subject site. The facility is a research lab which generates and stores on site solvents containing ignitable and toxic constituents resulting from research into the chemistry of fatty acids, esters and nitrogen derivatives thereof.

The facility has submitted a Part A permit and has been inspected by USEPA (12/10/80). While not a major site, it has been three years since the last inspection and another inspection should be scheduled.

Based on information contained in IEPA/DLPC files, there is a potential for the release of hazardous constituents to the ~~the~~ environment. It is unlikely that this type of release would occur. For this reason, the site has been assigned a Low priority.

The IL EDP information pertenant to the addition of this site to the system is enclosed. This firm was purchased by Akzo Chemie America in Jan, 1983. The name was changed to Akzo Chemie America in Jan, 1984. Operations continue under the same management.

cc: N. Region
USEPA - Region V

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APR 16 1984
E.P.A. — D.L.P.C.

IL 532-0571
EPA 90A 6/75

File: 9.[illegible] Research Enviro RCRA

Armak COMPANY

February 4, 1981

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FEB 5 1981
WASTE MANAGEMENT BRANCH
EPA, REGION V

Dr. Eugene Meyer
U.S. Environmental Protection
Agency - Region V
Waste Management Branch
230 S. Dearborn
Chicago, IL 60604

Dear Sir:

We recently received a copy of your report on the visit you made to our Research Laboratory on December 10, 1980. We appreciate any input which recognizes our accomplishments and points out areas requiring our further attention, with regard to RCRA.

Although the report appeared very complete, we would like to clarify several points that were made.

Form 2. IV Pre Transport Requirements

(D) 2. Containers are not always removed from the installation before they can accumulate for more than 90 days. Hence, the permit application for the storage facility.

Form 1. III General Facility Standards

(B) General Waste Analysis:

1. Should have been marked "yes" as landfills accepting this waste have required and in some cases have conducted detailed waste analyses on the hazardous wastes as a condition for acceptance. Results are on file.

2. A detailed waste analysis plan has been on file since mid-November, 1980.

(F) 2. "Restricted Area No Smoking" signs and "Restricted Area Authorized Personnel Only" signs have been posted on the fence surrounding the hazardous storage area since before the RCRA effective date.

VI Contingency Plan and Emergency Procedures

(A) 1-5. A contingency plan has been written and in use at this facility for several years. It is referred to as the Safety Manual and addresses emergency responses to fires, explosions, chemical spills, etc. It is constantly being revised and expanded.

P.O. BOX 1805
CHICAGO, ILLINOIS 60690
312 786-0400
TELEX 25-3233

ARMAK COMPANY IS A PART OF AKZONA, INC.

(B) Several copies are available at the site.

Form 5. II Storage Facility Standards

A.6. Yes. Ignitable wastes are stored in a fenced area over 50 feet from the property line.

B.1. Not applicable. Tanks are not used to store hazardous waste.

B.3. Not applicable. There are no continuous feed hazardous waste treatment facilities.

B.4. Not applicable. Tanks are not used to store hazardous wastes.

B.5. Not applicable. See above.

Once again, we appreciate your input, but feel you may not have been presented a true picture of the extent of our compliance with RCRA, due to the newness of these regulations. We feel that all these points should be clarified at this time. Should you have any further questions or comments, please do not hesitate to contact us.

Sincerely,

Jack McVaugh

Jack McVaugh, P.E.
Mgr.Environmental Affairs

JM: kad

cc: E. Harp
J.K.M. Day
G. Lichtenwalter

Clean .308 EWD

Akzo Chemie America

Research

8401 W. 47th Street
McCook, Illinois 60525
312/442-7100
Twx 910 259 1770
Answer back: Armak Res Mcck

March 12, 1987

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MAR 17 1987
IEPA-DLPC

Mr. Lawrence W. Eastep
Manager
Permit Section
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62706

Dear Mr. Eastep:

I have enclosed the signed "Certification Regarding Potential Releases from Solid Waste Management Units" which is required by you. If you have any questions I can be reached at (312) 442-7100.

Sincerely,

Charles E. Plank
Environmental Engineer

CEP/sla

Attachment 3 [redacted]

CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS (CLOSURE PLAN REVIEW)

FACILITY NAME: Akzo Chemie America

EPA I.D. NUMBER: ILD 000805705

LOCATION CITY: McCook

STATE: Illinois

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE - DO NOT INCLUDE HAZARDOUS WASTES UNITS CURRENTLY SHOWN IN YOUR PART A APPLICATION and in your closure plan.

		YES	NO
1 °	Landfill	1	X
2 °	Surface Impoundment	2	X
3 °	Land Farm	3	X
4 °	Waste Pile	4	X
5 °	Incinerator	5	X
6 °	Storage Tank (Above Ground)	6	X
7 °	Storage Tank (Underground)	7	X
8 °	Container Storage Area	8	X
9 °	Injection Wells	9	X
10 °	Wastewater Treatment Units	10	X
11 °	Transfer Stations	11	X
12 °	Waste Recycling Operations	12	X
13 °	Waste Treatment, Detoxification	13	X
14 °	Other Solid Waste Storage Container	14 X	

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2. If there are "Yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed on and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions, location at facility, provide a site plan if avaliable.

Chemical (special) Waste Dumpster with 14 cu yd capacity is located on the SW area of the facility. The wastes are Fatty Acid and Nitrogen Derivatives, Waste Stream No. 850152, Permit No. 850152-031600034. This is not a RCRA Hazardous Waste nor a Hazardous Constituent. Last Shipment 11/7/86 disposal at Land & Lakes Co. 1220 E 138th St., Chicago, IL 60627 on 11/13/86

NOTE: Hazardous waste are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII Of 40 CFR Part 261.

3. For the units noted in Number 1 above and also those hazardous waste units in your Part A application and in your closure plan. please describe for each unit any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the part or still be occurring.

   Please provide the following information

   a. Date of release
   b. Type of waste released .
   c. Quantity or volume of waste released
   d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

   There have been no releases of hazardous waste.

4. In regard to the prior releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases, Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

   There have been no releases of hazardous waste.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. 1 am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d))

RECEIVED
MAR 17 1987

CHARLES E PLANK ENVIRONMENTAL ENGINEER
Typed Name and Title

Signature

3/12/87
Date